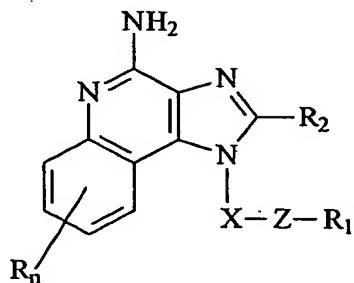


WHAT IS CLAIMED IS:

1. A compound of the formula (I):

5



(I)

10

wherein: X is -CHR<sub>3</sub>-, -CHR<sub>3</sub>-alkyl-, or -CHR<sub>3</sub>-alkenyl-;  
Z is -S-, -SO-, or -SO<sub>2</sub>-;  
R<sub>1</sub> is selected from the group consisting of:

15

- alkyl;
- aryl;
- heteroaryl;
- heterocyclyl;
- alkenyl;
- R<sub>4</sub>-aryl;
- R<sub>4</sub>-heteroaryl;
- R<sub>4</sub>-heterocyclyl;

20

R<sub>2</sub> is selected from the group consisting of:

25

- hydrogen;
- alkyl;
- alkenyl;
- aryl;
- heteroaryl;
- heterocyclyl;
- alkyl-Y-alkyl;

- alkyl-Y-alkenyl;
- alkyl-Y-aryl; and
- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

5 -OH;

-halogen;

-N(R<sub>3</sub>)<sub>2</sub>;

-CO-N(I)

-CO<sub>2</sub>-C<sub>1</sub> is al

CO-CO-C

10 -CO-O-C<sub>1-10</sub> alkyl;

-N<sub>3</sub>;

-aryl;

-heteroaryl;

### -heterocyclyl:

15 -CO-aryl; and

-CO-heteroaryl;

each  $R_3$  is independently H or  $C_{1-10}$  alkyl;

20 n is 0 to 4; and

each R present is independently selected from the group consisting of C<sub>1-10</sub> alkyl, C<sub>1-10</sub> alkoxy, hydroxy, halogen and trifluoromethyl; or a pharmaceutically acceptable salt thereof.

25 2. A compound of claim 1 wherein Z is  $-S-$ .

3. A compound of claim 1 wherein Z is  $-\text{SO}_2-$ .

4. A compound of claim 1 wherein R<sub>1</sub> is -alkyl.

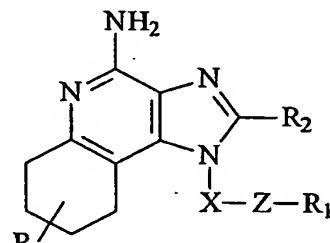
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5. A compound of claim 1 wherein R<sub>1</sub> is -aryl-

6. A compound of claim 1 wherein R<sub>1</sub> is phenyl.
7. A compound of claim 1 wherein R<sub>1</sub> is heteroaryl.
- 5 8. A compound of claim 1 wherein X is -(CH<sub>2</sub>)<sub>2-6</sub>-.
9. A compound of claim 1 wherein R<sub>2</sub> is H.
10. A compound of claim 1 wherein R<sub>2</sub> is -alkyl-O-alkyl.
- 10 11. A compound of claim 1 wherein R<sub>2</sub> is -alkyl.
12. A compound selected from the group consisting of:  
2-butyl-1-[4-(phenylthio)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
15 2-butyl-1-[2-(phenylthio)ethyl]-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-butyl-1-[4-(phenylsulfonyl)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-butyl-1-[4-(methylthio)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-butyl-1-[4-(methylsulfonyl)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
1-[2-(phenylthio)ethyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
20 1-[4-(phenylsulfonyl)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
1-[4-(methylsulfonyl)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
1-[4-(phenylthio)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
1-[4-(methylthio)butyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
25 2-butyl-1-[5-(methylsulfonyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-methyl-1-[5-(methylsulfonyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-ethyl-1-[5-(methylsulfonyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
1-[5-(methylsulfonyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-hexyl-1-[5-(methylsulfonyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-(2-methoxyethyl)-1-[5-(methylsulfonyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
30 2-butyl-1-[5-(methylthio)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-butyl-1-[5-(methylsulfinyl)pentyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
2-butyl-1-[3-(methylsulfonyl)propyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine; and

2-butyl-1-[3-(phenylsulfonyl)propyl]-1*H*-imidazo[4,5-*c*]quinolin-4-amine;  
or a pharmaceutically acceptable salt thereof.

13. A compound of the formula (II)



5

wherein: X is -CHR<sub>3</sub>-, -CHR<sub>3</sub>-alkyl-, or -CHR<sub>3</sub>-alkenyl-;

Z is -S-, -SO-, or -SO<sub>2</sub>-;

R<sub>1</sub> is selected from the group consisting of:

-alkyl;

10

-aryl;

-heteroaryl;

-heterocyclyl;

-alkenyl;

-R<sub>4</sub>-aryl;

15

-R<sub>4</sub>-heteroaryl; and

-R<sub>4</sub>-heterocyclyl;

R<sub>2</sub> is selected from the group consisting of:

-hydrogen;

20

-alkyl;

-alkenyl;

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;

25

- alkyl-Y- alkenyl;

-alkyl-Y-aryl; and

- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

-OH;

-halogen;

-N(R<sub>3</sub>)<sub>2</sub>;

-CO-N(R<sub>3</sub>)<sub>2</sub>;

-CO-C<sub>1-10</sub> alkyl;

-CO-O-C<sub>1-10</sub> alkyl;

-N<sub>3</sub>;

-aryl;

-heteroaryl;

-heterocyclyl;

-CO-aryl; and

-CO-heteroaryl

each  $R_3$  is independently H or  $C_{1-10}$  alkyl;

each  $R_4$  is independently alkyl or alkenyl;

each **Y** is independently  $-\text{O}-$  or  $-\text{S}(\text{O})_{0-2}-$

**n** is 0 to 4; and

each R present is independently selected from the group consisting of C<sub>1</sub> to

20 alkyl, C<sub>1-10</sub> alkoxy, hydroxy, halogen and trifluoromethyl:

or a pharmaceutically acceptable salt thereof

14. A compound of claim 13 wherein  $R_1$  is phenyl

25 15. A compound of claim 13 wherein R<sub>2</sub> is H or alkyl

16. A compound of claim 13 wherein R<sub>2</sub> is -alkyl-O-alkyl

17. A pharmaceutical composition comprising a therapeutically effective amount of a

30 compound of claim 1 and a pharmaceutically acceptable carrier.

18. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 12 and a pharmaceutically acceptable carrier.

5 19. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound of claim 1 to the animal.

20. The method of claim 19 wherein the cytokine is IFN- $\alpha$ .

10 21. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound of claim 1 to the animal.

22. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound of claim 1 to the animal.

15 23. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound of claim 12 to the animal.

24. The method of claim 23 wherein the cytokine is IFN- $\alpha$ .

20 25. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound of claim 12 to the animal.

26. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound of claim 12 to the animal.

25 27. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 13 and a pharmaceutically acceptable carrier.

30 28. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound of claim 13 to the animal.

29. The method of claim 29 wherein the cytokine is IFN- $\alpha$ .

30. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound of claim 13 to the animal.

5 31. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound of claim 13 to the animal.